


WHAT IS CLAIMED IS:

1 1. A connection admission control method for a packet-based switching system,
2 comprising the steps of:
3 assigning equivalent bandwidths to variable speed connections;
4 increasing or reducing the equivalent bandwidths of the variable speed
5 connections by a scaling factor to achieve an assigned bandwidth;
6 adjusting the scaling factor to change the assigned bandwidths; and
7 determining whether to accept or refuse new variable speed connections based
8 on whether the sum of assigned bandwidths for existing variable speed connections and new
9 variable speed connections exceeds a bandwidth available to variable speed connections.

1 2. A connection admission control method according to claim 1, further
2 comprising the steps of:
3 increasing or reducing the bandwidth available to variable speed connections by
4 a variable speed traffic factor; and
5 adjusting the variable speed traffic factor.

1 3. A connection admission control method according to claim 2, wherein the
2 scaling factor and variable speed traffic factor are adjusted while the packet-based switching
3 system is online.

1  4. A connection admission control method according to claim 1, wherein the
2 connection admission control method determines whether to accept or refuse new constant
3 speed connections and new variable speed connections, the method further comprising the steps
4 of:

5 summing existing and new constant speed connections;

6 if the sum of bandwidths for existing and new constant speed connections
7 exceeds a maximum factor, reducing a bandwidth available to constant speed connections; and
8 adjusting the maximum factor.

1 5. A connection admission control method according to claim 4, further
2 comprising the step of:

3 determining whether to accept or refuse new constant speed connections based
4 on whether the sum of existing and new constant speed connections exceed the bandwidth
5 available to constant speed connections.

1 6. A connection admission control method according to claim 4, wherein the
2 bandwidth available to constant speed connections is reduced by a constant speed traffic factor
3 if the sum of bandwidths for existing and new constant speed connections exceeds the
4 maximum factor, the method further comprising the step of adjusting the constant speed traffic

5 parameter.

1 7. A connection admission control method according to claim 6, wherein the
2 scaling factor, the maximum factor and the constant speed traffic factor are adjusted while the
3 packet-based switching system is online.

1 8. A connection admission control method according to claim 1, wherein the
2 connection admission control method determines whether to accept or refuse new unspecified
3 connections and new variable speed connections, at least a portion of the unspecified
4 connections not having a sustained cell rate, the sustained cell rate being determined based on
5 an SCR factor, the method further comprising the step of adjusting the SCR factor.

1 9. A connection admission control method according to claim 8, wherein the
2 sustained cell rate for unspecified connections is determined by multiplying a peak cell rate by
3 the SCR factor.

1 10. A connection admission control method according to claim 8, further
2 comprising the steps of:
3 assigning equivalent bandwidths to unspecified connections;
increasing or reducing the equivalent bandwidths of the unspecified connections

5 by the scaling factor to achieve an assigned bandwidth; and
6 determining whether to accept or refuse new unspecified connections based on
7 whether the sum of assigned bandwidths for existing and new unspecified connections exceeds
8 a bandwidth available to unspecified connections.

1 11. A connection admission control method according to claim 10, wherein the
2 scaling factor and the SCR factor are adjusted while the packet-based switch is online.

3 12. A method according to claim 1, further comprising the steps of:
4 maintaining an original scaling factor for all existing variable speed connections;
5 using a new scaling factor to allocate bandwidth for all new variable speed
6 connections; and
7 when an existing variable speed connection is terminated, freeing an assigned
bandwidth determined by the original scaling factor and reallocating freed bandwidth based on
the new scaling factor.

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